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**(12) United States Patent**  
**Jepson et al.****(10) Patent No.: US 6,344,033 B1**  
**(45) Date of Patent: \*Feb. 5, 2002****(54) NEEDLELESS CONNECTOR****(75) Inventors:** Steven C. Jepson; Thomas E. Dudar,  
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**(\*) Notice:** Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
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claimer.**FOREIGN PATENT DOCUMENTS**

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**(21) Appl. No.: 09/370,864****(22) Filed: Aug. 9, 1999****Related U.S. Application Data****(63)** Continuation of application No. 09/081,728, filed on May  
20, 1998, now Pat. No. 5,957,898.  
**(60)** Provisional application No. 60/047,161, filed on May 20,  
1997.**(51) Int. Cl.<sup>7</sup> ..... A61M 5/00****(52) U.S. Cl. .... 604/256; 604/533; 128/912****(58) Field of Search ..... 604/246, 167,**  
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**Buonaiuto; Francis C. Kowalik****(57) ABSTRACT**

A needleless connector is provided which utilizes a resealable preslit septum valve. The valve is resiliently restrained relative to a housing with the valve and housing configured to accept a standard male luer lock having a luer tip which penetrates the valve through the opening to extend within the housing and a luer locking flange of the luer lock extending about the housing. The valve includes a disk shaped upper portion covering the opening, a lower portion spaced from the housing and extending downward from the disk shaped portion into a passageway defined by the housing, and an annular skirt to attach the septum to the housing. The connector exhibits satisfactory leak pressure after multiple connections and disconnects to the luer lock fitting and long periods of indwell of the luer tip.

**14 Claims, 14 Drawing Sheets**